"FINDING HOME": UNDERSTANDING HOW MUSIC SUPPORTS LISTENERS' MENTAL HEALTH THROUGH A CASE STUDY OF BTS

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ABSTRACT

The positive impact of music on people's mental health and wellbeing has been well researched in music psychology, but there is a dearth of research exploring the implications of these benefits for the design of commercial music services (CMS). In this paper, we investigate how popular music can support the listener's mental health through a case study of fans of the music group BTS, with a goal of understanding how they perceive and describe the way music is influencing their mental health. We aim to derive specific design implications for CMS to facilitate such support for fans' mental health and wellbeing. Through an online survey of 1190 responses, we identify and discuss the patterns of seven different mood regulations along with major themes on fans' lived experiences of how BTS's music (1) provides comfort, (2) catalyzes self-growth, and (3) facilitates coping. We conclude the study with a discussion of four specific suggestions for CMS features incorporating (1) visual elements, (2) non-music media, (3) user-generated content for collective sense-making, and (4) metadata related to mood and lyrical content that can facilitate the mental health support provided by popular music.

1. INTRODUCTION

The positive physiological and psychological effects of music on health and wellbeing are well researched in the field of music psychology [1-4]. Music can positively impact people's mental health by supporting mood regulation [5-6], social relationships [7-8], and increasing positive emotions and self-esteem [9]. However, in the field of music information retrieval (MIR), there is limited research exploring the connections between music and the mental health of the listener. While there is substantial research on music mood in the MIR field [10], the primary focus is on identifying the mood of the music with the goal of supporting better organization, browsing, or recommendation rather than influencing the emotions of the listeners to support their health and wellbeing (e.g., [11-16]). Researchers have only recently started to investigate more deeply into the impact of music on mental health in the MIR field, especially on how such insights inform the design of music services and systems (e.g., [9]). Multiple recent MIR user studies also point out the importance of the social aspect in

listening to music [8, 17]. In particular, the complex context of being a music fan involves online communities and social media, as well as the fan's perceived relationship with the artists [18] which will inevitably influence the impact of music on listeners' mental health. Yet, there is a dearth of research exploring the holistic context of the listener, including external factors related to music such as the social relationship of listeners to artists and other fans.

We aim to address this gap by investigating how popular music can support music listeners' mental health and wellbeing through a case study of the ARMY fandom. The ARMY fandom supports BTS, a seven-person music group from South Korea, and is one of the biggest music fandoms in 2021 [18]. There are several reasons for focusing on music fans as a user group in this study, and specifically the fans of BTS. First, we wanted to explore the impact of not only the music itself but also the context in which users engage with music on their mental health and wellbeing, including the context of music creation (e.g., information about the artist) and other social context (e.g., relationship with other fans). Of the possible fandoms to study, we chose the ARMY fandom due to (1) its size and diversity demonstrated by the recent census data of over 400K responses from ARMYs [19], (2) fan's active engagement with each other demonstrated by the social media activities [20-21], and (3) prior literature indicating the music of BTS being specifically helpful in supporting their fan's mental health as they relate to the messages in the songs [22-23].

We conducted an empirical study employing an online survey to better understand the impact of BTS's music on their fans' mental health. We aimed to answer the following research questions:

RQ1: How is BTS's music helping to support fans' mental health and well-being?

RQ2: What are the implications for designing commercial music services to facilitate such support for fans' mental health and wellbeing?

2. RELATED WORK

2.1 Music and Mental Health

A significant body of literature in the field of music psychology examines different positive influences music can have on people's mood, memory, learning, and identity as well as the use of music in various forms of therapy [24]. Regout conducted a literature review to understand why music has a positive influence on mental wellbeing and how music could be properly used in therapy, and showed that music can have an effect on people's emotion,

memory, and the experience of pleasure [24]. For instance, Knight and Rickard [25] suggested that music can lessen anxiety by measuring physiological signals such as heart-beat, cortisol level, blood glucose, etc. Thayer et al. [26] also identified listening to music as one of the most successful strategies for changing a bad mood, raising energy and reduce tension. Using music in therapy helps reduce cortisol levels which can help decrease the perception of anxiety and depression [28-29]. Nilsson [27] conducted a systematic review on 42 randomized controlled trials of the effects of music interventions and found that music intervention can reduce pain and anxiety in patients. Woelfer and Lee [7] found that young people experiencing homelessness used music for mood regulation and coping as it allowed them to "calm down or relieve tension", "help get through difficult times", or "relieve boredom". They also discussed how participants listened to songs for a cathartic experience and for reducing the sense of isolation.

Several studies specifically researched how emotion in music plays a role in mood regulation, "a process of satisfying personal mood-related needs by musical activities" [5]. To better understand and measure the emotional functions of music, Saarikallio and Erkkilä [5] presented a model of mood regulation which provides a useful framework for studying how this regulatory process can be applied in various contexts of music listeners. In this model, seven types of regulatory strategies are used for different changes in mood: entertainment, revival, strong sensation, diversion, discharge, mental work, and solace [5]. We used this model to inform a part of our codebook under the category of "Mood regulation", and the mapping can be seen in the Findings section.

Some studies looked into the influence of popular music in particular. For instance, Kresovich [30] investigated how college students' exposure to pop songs referencing mental health difficulties affect them. The study found that participants' increased perceived personal connection with the songs and parasocial relationships with their performing artists were associated with increased mental health empathy [30]. A few researchers examined how BTS's music influences people's mental health. Blady [22] analyzed the discography of BTS, identifying multiple themes that support mental health by challenging stereotypes and social norms destructive to youth, encouraging self-love and empathy and showing the value of perseverance, vulnerability, and compassion. Rubin [23], in her qualitative study of 47 participants, studied how Strong Experiences with Music (SEMs) experienced by ARMYs contributed to personal growth, resulting in perspective changes and the ARMYs' use of music for different purposes like improving mood, soothing, and motivating themselves.

2.2 Support for Mental Health in Fandoms

While some have previously believed members of fandom communities are more prone to wellbeing issues, recent research has shown no significant difference between fans and non-fans in terms of their psychological distress and wellbeing [31]. Furthermore, some research highlighted the positive impact of fandoms on mental health. For instance, fans have reported that being a part of such communities has helped them find a sense of purpose and meaning in life [32]. Previous analyses on sports fans have shown that identification with sports teams have resulted in fans developing greater self-esteem and feeling less lonely [33] and many of these fans have noted that they identify strongly with their teams [34]. Though the positive benefits of fan comradery are widely accepted in sports, the value of fans' social and emotional experience is often stigmatized and diminished for fans of boy bands, particularly female fans [18, 20-21].

A sense of belonging has been strongly associated with the in-group identification among different fan communities [35]. In a study examining whether this type of social connection uniquely mediates the relationship between fandom identification and wellbeing, Reysen et al. [36] noted that some fandoms provide additional aid for its members in the form of social support, advice, and resources for coping, and showed how these social connections can result in adequate wellbeing of both stigmatized and non-stigmatized fan groups. All fans have the potential to benefit from social connection as these communities, regardless of their particular interests, are similar with respect to such psychological processes [36]. Laffan [32] reports similar findings regarding K-pop fans showing increased happiness, self-esteem, and social connectedness.

With the rise of social media and fandoms growing in a digital environment, there is an opportunity for more research on how the wellbeing of fans are impacted online. There are both positive and negative aspects of social media, and research has shown that the effect of fandom activities and mental health can be different depending on the user characteristics, such as gender [37], warranting more research on different types of user groups. McInroy [38] studied how online fan communities serve as a source of social support for sexual and gender minority youth and found that participation in these communities can support the sense of connection, empowerment, and temporary escape from stress, decrease isolation, and offer opportunities for mentorship. Our study will contribute to gaining additional insights on how being part of music fandoms affects fans' mental health.

3. STUDY DESIGN AND METHOD

We conducted an online survey asking 38 questions about fans' engagement with BTS's musical and non-musical content, BTS-related activities, overall experience in the fandom and their mental health. We asked six questions about how they became fans and seven demographic questions. The survey was released in early February 2021 and was open for two weeks. Participants were recruited through a prominent research account in the fandom, resulting in 10,300 engagements on Twitter. The study was approved by the institutional review board at the University of Washington. We obtained a total of 1,190 responses. The demographic information of participants is summarized in Table 1.

Age	Mean = 26, Min =13, Max = 71, StdDev = 10.02
Race	Asian = 567, White = 317, Hispanic = 210, Black = 43, Native Hawaiian/Pacific Islander = 7, American Indian/Alaska Native = 3, Described in own words = 106

	Gender	Female = 1105, Non-binary = 29, Male = 15, Described in own words = 26
	Country of Residence (20 or more)	USA = 268, Philippines = 155, India = 123, Indonesia = 54, Malaysia = 47, Mexico = 45, South Africa = 38, UK = 32, Germany = 29, Canada = 26

Table 1. Demographic summary of survey respondents.

The scope of the survey was broader, but in this paper we focus on reporting the findings related to the research questions stated above. This primarily includes the analysis of responses to the open-ended question asking, "Can you describe how BTS's music is helping to support your mental health and wellbeing?" along with other demographic information about the participants.

The free-text responses were coded using a combination of inductive and deductive approaches [39]. To create the draft codebook, the research team distributed a portion of the responses to each member (approximately 200 responses per person) to review. Using a Mural board (a collaborative online tool), each team member captured and recorded emerging ideas and themes on virtual sticky notes as they reviewed their assigned responses. Afterwards, the team collectively engaged in a sorting activity to categorize the main themes which resulted in the initial codebook [40]. The codebook has three main categories of codes (1) Mood regulation, (2) Appeal, and (3) Outcome. The codes related to Mood regulation were well-aligned with the regulatory strategies from Saarikallio and Erkkilä [5], and the descriptions shown in Table 2 are adopted from their model. The rest of the thematic codes were derived inductively from the data.

Using this initial codebook, we had four coders code the open-ended survey responses. The codebook was refined through an iterative process. After coding part of the data, the team met to discuss any issues that emerged during the coding process. A series of discussions led to a few changes - Motivation was subsumed under Coping, and Social Justice and Open Discussion were merged into Difficult Topics as the coded results showed conceptual overlapping. Some definitions were rewritten for clarification. After the codebook was finalized, all four coders reviewed and revised their initial coding using the codebook.

Each survey response was coded by two independent coders, to allow for checking the intercoder reliability. Using a formula in a spreadsheet, all the discrepancies in the coded results were highlighted. We followed a consensus model [41] where two coders reviewed and discussed all the discrepancies in code application, aiming to reach a consensus. When a consensus could not be reached, a third researcher acted as a tie-breaker.

4. FINDINGS

Table 2 shows how frequently each code was applied when coding responses to the question asking how BTS's music supports listeners' mental health and wellbeing. In the following sections, we discuss the major themes that emerged from analyzing these coded responses, summarizing the connections among the appeal of the music and how the music changed the listeners' moods resulting in specific mental health related outcomes.

	Code	Description	Freq
Mood Regulation	Comfort	Feeling understood, comforted, and reassured	505
	Uplift	Lifting up spirit and keeping a positive mood	356
	Release	Being able to express the feelings and release the negative emotions	201
	Reflect	Music promotes imagery, insights, introspection	153
	Relax	Feeling revived, relaxed, and energized	112
	Distract	Forgetting about current negative mood and challenging situations	63
	Excite	Intense feeling of arousal, thrills	14
Appeal	Lyrics (Message)	Resonating with the message of the lyrics and/or concept of the song	544
	Diversity	A wide variety of music	107
	Authenticity	Feeling that the artists realistically present themselves	78
	Difficult Topics	Ability to discuss difficult topics like social injustice, mental health, challenges of youth, existential crisis, etc.	60
	Sound (Melody)	Comments on liking how the song sounds and/or the melody of the song	49
Outcome	Coping	Listeners being able to deal with challenges, music helping to "ground" them, helping them to get by every day	492
	Connection	Feeling connections to the artists, music, and other fans; comments on shared thoughts and experiences	293
	Acceptance	Feeling accepted by others/themselves in terms of their identity and experience	197
	Self-growth	Learning something about oneself or the world; being inspired to take on tasks leading to self-improvement	146
	Empowerment	Feeling strength, courage, and confidence	54

Table 2. Frequency of codes.

4.1 Feeling Comforted, Understood, and Not Alone

Finding comfort through BTS's music was the most frequently mentioned way of regulating mood. Participants mentioned "feeling safe" and "understood" during situations that were challenging, frustrating or unfulfilling. When discussing comfort, participants often imagined the songs giving them a hug (e.g., "*The lyrics are like a warm hug*" (P475), "*a pat on the back*" (P91), or holding their hands (e.g., "*I feel like they hold my hand and say " hey it's okay we can get through this together " rather than " oh your [sic] are sad here's a sad song.*" (P313)).

*Their songs just **made me feel safe**. 2! 3! **hugs me and holds my hand to hope for better days with me** [...] The first time I listen to mono, I looked for a pen and wrote a poem - I haven't written a poem in 2 years. Their songs **make me feel alive**. **Their music is always here to tell me that I'm not alone**. Their voices soothes [sic] my worries.* (P55)

Many participants noted that the position the artists take when they convey a positive message does make a difference in how relatable they are, especially when participants can see the artists are "*also experiencing such emotions and pains*" (P750). Thus, this feeling of comfort was strengthened through the authenticity of the artists and their message. P764 explains how BTS's music does not try to "*sugarcoat*" the situation or give unrealistic hope.

*I think it's especially important to note that while they give hope through this, **it's not baseless hope or toxic positivity [...] they don't give false hope that things will magically get better** - instead the boys say that while things probably won't change, tomorrow is still a new day to start over with. **This realistic view can be found in many of BTS' songs and it's this that really supports my mental health [...]**"* (P764)

This sense of being understood and comforted led to many participants feeling intimately connected to the songs, artists, and others:

*It feels like **I just shared my deepest fears with someone and that person's telling me that it's okay, that they understand me, that they got through it and therefore so can I.*** (P673)

These imagined connections can be powerful, especially when used as mechanisms for processing difficult situations, releasing negative emotions, and grounding oneself to overcome those situations. P47 shares:

*[...] listening to the songs makes me feel like if **I and they keep a very nice secret together and understand each other completely. As if they were my dear and closest friends who understand the bad things that happen in my life and always have the perfect words to tell me** [...] One month ago, my brother passed away due covid-19. You can imagine how I felt. The moment I received the news he was being incinerated, the same exact minute, the preview for the winter package 2021 was released. **With the images of them lighting matches, I felt as if they were honouring my brother's memory. I felt so supported and shocked at the same time.** It was incredible.* (P47)

4.2 Self-growth through Understanding and Accepting Oneself

Many participants reported feeling cathartic after listening to BTS's music, commenting on how it helped them understand and articulate their own emotions. Participants who were considering suicide or had attempted suicide in the past said BTS's song *Magic Shop* supported them when they *"found"* it.

*I was in a dark place and they were and still are my light. i was about to commit suicide, but then i came across their song magic shop and never looked back. their lyrics is my therapy and my healing. At the end of a bad day, i can always look for them. Their songs are so comforting and **it's like they know exactly what to say to you. i'm not someone that show my emotions or feelings easily but when i'm listening to their music, it feels like i can let it all out.** finding bts wasn't finding just a boy band. it was finding a home, they are like a warm hug, a hot chocolate on a winter day, the sun after rain.* (P111)

*BTS' music is very therapeutic for me. **Their sound and lyrics speak right to my heart and have awoken feelings that were long asleep**.* (P874)

Numerous similar responses suggest that listeners perhaps compartmentalize and hide from their feelings leading to "feeling numb" or being unable to verbalize their emotions, and the music serves as a catalyst to unlock those feelings. Participants shared how they found the release of such thoughts and feelings helpful for their mental health, often accompanied by crying. P608 shared:

*I am the kind of person who generally doesn't cry unless I am really angry. Thus, **I am not able to express well when I am sad or hopeless and keep my feelings bottled up inside me. But when I listened to Zero o'clock, it was the first time that I cried just***

*because I was sad. At that point of time I realised how important was BTS for my life. **After I actually cried and let out my feelings, I feel a lot better now**.* (P608)

Participants also stated how the messages in the songs help them think about and discuss difficult issues they have sometimes been avoiding or with social stigma.

*Their music has the power to invite me to reflect about subjects that I often avoid, like fears of failure, imperfectness, hopelessness, and loss. But those are things that I need to face to learn about myself. Listening to their music feels like learning the journey of life together with them...sometimes painful, sometimes playful, another time full of anger, and there are joys and comfort too, **but never alone**.* (P779)

*[...] Their overall message of **normalizing mental and the conversation of mental health in society is so important for me**. I have OCD, Anxiety, and Depression, and BTS talking about mental health, writing about it, sharing their personal experiences with mental health issues **helped create an environment free of judgment and doubts**.* (P260)

This kind of reflection also led to opportunities for introspection, self-acceptance, and self-growth. Participants shared how listening to certain songs led them to challenge their way of thinking, change their behavior, or take concrete actions to better their mental health:

*When I was afraid to go to counselling, yoongi's interlude shadow motivated me because **if he can share his fears with millions, I can share it with at least one person**.* (P559)

*Their music can make me feel emotions i didn't even know they existed...when i listen to their songs i feel like a [sic] **learn something new about myself, them, the world, society etc. Through their music I've learnt to love and appreciate myself and others** and they make me feel safe, comfortable like **when i listen to them i feel like I'm home**.* (P561)

P912 noted this change to positive moods sometimes led to a long-term impact beyond when they were actively listening to music.

*I didn't noticed [sic] it first but after becoming army, I **have become cheerful and confident** (even though I'm [sic] typical introvert). **Now it's very hard to upset me for so long I quickly get over it because of their music***. (P912)

4.3 Intentional Coping through Various Music

The diversity of BTS's music emerged as an appeal. Participants talked about accessing specific songs when they wanted to attain a certain mood such as energy for work, relaxing after a tough day, or calming anxiety.

*On my daily life, BTS music gives me comfort and companionship. **I curate my BTS music/MV playlists depending on my mood or activities**, for example I choose cheerful and/or energetic songs to make boring chores more palatable, comforting and beautiful songs when I'm feeling anxious or unsettled, soft and chill songs to help me focus when I'm reading or working.* (P328)

In addition to feeling comforted or cathartic which was common for participants, the music also helped them sometimes forget about their troubles or worries.

Putting on my earphones and listening to BTS helps me escape, disconnect from my real life, stop hearing the screams and negative words around me. Also the lyrics of songs like Paradise and 00 o clock give me peace with myself, reduce my anxiety and self

blaming. I have a special playlist I use when I need to sleep with-out hearing my parents arguing or cry one [sic] in my room [...] (P21)

However, most participants did not simply dwell in escapism; listening to specific songs could also help them feel more focused, empowered, and persistent, helping them deal with real-life challenges. P886 explains:

The messages in the music keep me positively motivated to not give up day to day. *My husband died of cancer in December 2019 after two years of treatments. [...] Certain songs like Not Today* ***kept me focused on pushing through during my husband's treatment*** *and Spring Day is still* ***my song for grief****. Even Life Goes On has* ***made me feel seen and understood****. I stay focused on my personal value and persistence and on forgiving myself for failures through the music [...]* (P886)

Participants also talked about having a rush of positive feelings from certain songs and they specifically sought them out when they needed a *"serotonin boost"* (P679). Some expressed their feelings by singing and dancing along or studying and memorizing the lyrics. Through making strategic choices of music from the diverse discography of BTS and having go-to songs for achieving different moods, fans were able to better cope with difficult situations and have something to look forward to and enjoy. Some expressed how essential listening to BTS has become in their daily lives, such as P561:

*[...] i don't think that i will ever stop listening to them because their music has helped me get through a lot so i can't just stop they're a part of my lifestyle at this point...****there isn't even a day without listening to AT LEAST one song of theirs****...i can't live without music and above all without BTS music.* (P561)

5. DISCUSSION

5.1 Connection of Listeners and Songs through Support from Textual and Visual Elements

Many participants personified BTS's songs and lyrics as a "friend" or "companion", often experiencing physical sensations of comfort while listening to the songs. These imagined connections provided real comfort to the participants and helped them develop emotional resilience for self-coping. Visualizing a place or person of comfort through associated imagery and externalizing thoughts that have been repressed by relating to lyrics are therapeutic strategies which participants learned and experienced through these songs, akin to tapping into positive imagination for recovering from trauma [42].

Researchers have found that situations that are more difficult to tackle than one has emotional, social, and physical resources for, can lead to avoidant coping mechanisms such as denial or escapism [43]. BTS's lyrical message helped participants find comfort and cope by balancing escapism, distraction, and/or the permission to feel the reality of their experience. For a few fans, BTS's music helped them escape or forget their difficult reality momentarily which they could not control (e.g., the pandemic or abusive household). For others, it helped them connect with reality, and provided space for articulating and normalizing negative experiences, feelings of loss, and emotions that are a part of one's lived experience but are hidden, stigmatized, and/or feared in the society. The therapeutic value of such

lyrics occurs when repressed emotions and thoughts which are otherwise alienated and hated upon by the individual and society are now heard, acknowledged, and given a healthy outlet (e.g., crying, writing, or singing). This reduces the conflict within self and helps participants accept and welcome a range of emotions (e.g., [44]). BTS's lyricism addressing diverse life circumstances acknowledges two kinds of hope (1) pursuing an ideal dream and (2) reducing the conflict in accepting the authentic, imperfect reality of change. The two types of hope helped participants to relate to and cope with the reality of mundane and negative experiences.

Developing routine coping practices such as reading, writing, or journaling about the lyrics demonstrated reflection and self-growth. Participants relied on subtitles in some music videos and fan-translated lyrics to learn the message of the song. The importance of visual musical experiences has also been noted in [45] as they discuss the dominance of YouTube videos containing music/lyrics.

Design implication: Providing visual cues for songs can enhance the user experience by providing different metaphors for personification and connections. Real-time translation of lyrics can support coping by reducing the burden of navigating multiple tools. Additionally, lyric videos allow listeners to not only process the text more effectively, but also visualize it as they hear the songs again.

5.2 Connections with Artists beyond Music

Most participants experienced connections with artists beyond music through the artists' live conversations with fans, personal stories, struggles, behind the scenes stories of the song/album, art, and imagery. These participants valued the authenticity of the artists in various types of work, explaining how easy it was to relate to them on a personal level.

These connections with the fandom often break the boundaries of how the artists portray themselves in the public eye and their private lives. As fans perceived BTS's music, performance, and actions to be congruent with their real-life personalities, they felt a deeper connection with the authenticity of the artists and their message. Often, fans cited being better versions of themselves like BTS thus, not only idolizing the artists but also taking actions in the real world inspired by the artists.

Design implication: There is value in integrating music services with streaming of other media and stories to support fans in making and sustaining these connections and fostering open discussions on lifestyles and issues relevant to their real life. A good example is the *Weverse* app which integrates the performance video, vlogs and other non-music video content, magazine articles, etc. This helps to collectively provide a better picture of the artist, allows fans to feel closer to and further relate to the artist, and reduces the burden of switching between multiple platforms.

5.3 Connections with Other Fans through Discussion of Music

Some participants spoke about feeling an abstract connection with "others out there" who might be listening and relating to the same music. This reduced their sense of

loneliness. Some discussed songs and lyrics with other ARMYs and bonded with them, even learning to share openly (e.g., *"It helped me open up to the friends I met through their music and ultimately helped me to go get professional help."*(P171)).

As interpretation of art is abstract and variable, fandoms are known to theorize and make meaning of music videos and songs together, especially in the context of transmedia storytelling [18, 20]. Online platforms such as "songmeanings.com" is an example of such fan engagement. There is also appeal in the comments left for songs on platforms like Soundcloud which show comments with the timestamp of the song, potentially providing an opportunity for 'singing along' in comments, externalizing emotions felt, and/or reflecting on the music or lyrics while listening in real time [46]. Live streaming and live chats on music streaming platforms also allow for the experience of real time connections [47]. User interactions are often observed in the comments section for live BTS performances on YouTube. Stronger connections between social media and CMS may be beneficial with more social features in music streaming services such as a post discussing lyrics, theories, or reflections connected to the art and message [48]. As communities centered around music continue to cross boundaries of language and culture, it is important to celebrate such diversity on CMS by supporting translation and interpretation of lyrics in different cultural contexts.

Design implication: Fans often curate social media posts to add lyrics and streaming links, sometimes going above and beyond to edit video clips and/or add lyrical translations of parts of the song they want to share or discuss. Adding a feature in streaming services which allows users to take snippets of the song, add a translation or their own interpretation of the lyrics, and share and discuss them in-context, would make such experiences more accessible to those without sophisticated video editing skills.

5.4 Playlists and Metadata Supporting Different Mood Regulations

In our data, we saw that BTS's music helped participants both maintain and achieve diverse emotional states such as positive moods, relaxation, release of negative moods, and comfort. Digital mental health interventions can be a system-driven "push" wherein the system recognizes appropriate time to intervene (just-in-time adaptive interventions (e.g., [49])) or a user-driven "pull" wherein the participant actively seeks out the intervention and personalizes it to their own context [50]. In the context of music and mental health, we draw parallels to these actions as recommendations of songs that were pushed to participants allowed them to discover helpful songs serendipitously. Some participants also spoke about actively searching or browsing helpful songs and curating playlists for when they wanted to be in a certain mental state.

Explaining a serendipitous discovery, many participants talked about finding the right song at the moment when they needed it. As discussed above, in some cases, the song and its message led to the participant realizing how they were feeling, leading to catharsis of intense emotions they were bottling up inside such as grief or loss during the COVID-19 pandemic [51]. The songs and lyrics

provided an external voice for their thoughts. Additionally, coping with repeated lyrics of the song as a "mantra" can help reduce intrusive thoughts and calm anxiety [52].

BTS's diverse discography was cited by many participants as an aspect that helped them relate to every mood that they experienced. Catharsis without comfort can be difficult to process alone if an individual is unable to get out of their negative state of mind. Therefore, supporting diversity in general when recommending music to facilitate mood regulation (e.g., mixing up comforting songs with songs that may talk about potentially triggering emotions and experiences such as suicide) may be important.

Design implication: This strong association of mood with music implies that CMS should expand their taxonomy to include mood and lyrics for recommendations. Platforms should recommend broader mood-based playlists that support a range of emotions using metadata from the lyrical content of the song and the community's responses instead of just basing playlists on the current mood of the listener or the dominant mood of the songs. The outcome or change in mood that fans experience should also be considered and tagged.

6. CONCLUSION AND FUTURE WORK

Our study shows how BTS's music supports fans' mental health and wellbeing through a variety of mood regulations, allowing them to cope, reflect, and grow by listening to their music, and even fundamentally impacting their behavior or outlook in some cases.

Studying one particular fandom from an emic approach allows us to gain a deeper understanding of the context and culture of the community and the discography of the artist to better understand the user data, resulting in rich discussion. However, such a study design also has limitations. First, the study focuses specifically on the fans of BTS and thus the findings and design implications are more relevant to popular music with lyrics. Future research with fans of artists with vastly different kinds of music will help expand our knowledge on how music can support the listeners' mental health. Second, despite the large number of respondents, the sample does not represent the whole fandom given its size and global nature, especially due to the fact that the survey was administered in English. Further research is needed to better understand fans in different languages and cultural contexts. An investigation of male-dominated music fandoms could also offer additional insights. In our future work, we plan to explore the impact of individual songs on listeners to understand whether the impact can be long-lasting, resulting in more substantial changes to listener's behavior or outlook.

While the findings discussed in this paper are specific to BTS's music, the ways in which fans interact with, look up to, and imagine and feel connections with the songs and artists are not unique to just BTS or K-pop. Numerous Western artists such as Halsey, Lady Gaga, Coldplay, Demi Lovato, and Logic, to name a few, openly discuss and make songs about mental health issues, and their fans use music to manage and discuss their own mental health. The design implications derived from our findings can also support fans of other artists and in general, help people use music for supporting their mental wellbeing.

7. ACKNOWLEDGEMENTS

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